

Figure 1A

1	ACAAATGACCGGGAGCCATGACGTCATCGGGGGCGCAGGAAAGCAGGTGCTCTGCTT	60
1	MTGSHDVIGGAGKQVLCCF	19
61		12
20	CKQRNKSL©TYP©VALW	39
121	GCTCCTGACCTCCCCCGCCTGTAATGCTCTGAGCACTTCAGCAGTAATGCATGGAAGAGA	18
40	LLTSPACNALSTSAVMHGRD	59
181	TAAGGGGTCTGTGACCCATGGAACTGTCCAAGTCCTCTCTGACACCCGCTTCTTTTCCTG	24
°60	K G S V T H G T V Q V L S D T R F F S C	79
241	CCGTGAAGGACTACTTCCAGCAACCCAGTCTCCTGCCATGTCCGACCCCATCACGCTGAA	30
80	REGLLPATQSPAMS <u>DPITLN</u>	. 99
301	CGTCGGGGGAAGCTCTATACAACCTCACTGGCGACCCTGACCAGCTTCCCTGACTCCAT	36
100	V G G K L Y T T S L A T L T S F P D S M	11
361	GCTAGGCGCCATGTTCAGCGGGAAGATGCCCACCAAGAGGGACAGCCAGGGCAACTGCTT	42
120	<u>LGAMFSGKMPTKRDSQGNCF</u>	13
421	CATTGACCGTGACGGCAAAGTGTTCCGCTATATCCTCAACTTCCTGCGGACCTCCCACCT	48
140	I D R D G K V F R Y I L N F L R T S H L	15
481	TGACCTGCCTGAGGACTTCCAGGAGATGGGGCTGCTCCGCAGGGAGGCCGACTTCTACCA	54
160	<u>DLPEDFQEMGLLRREADFYQ</u>	17
541	GGTGCAGCCCTGATTGAGGCCCTGCAGGAGAAGGAAGTGGAGCTCTCCAAGGCCGAGAA	60
180	<u>V Q P L I E A L Q E K E V</u> E L S K A E K	19
601	GAATGCCATGCTCAACATCACACTGAACCAGCGTGTGCAGACGGTCCACTTCACTGTGCG N A M L N I T L N O R V O T V H F T V R	66
200	NAMLNITLNQRVQTVHFTVR	21
	CGAGGCACCCCAGATCTACAGCCTCTCCTCTTCCAGCATGGAGGTCTTCAACGCCAACAT	72
220	EAPQIYSLSSSME V FM, ANI	23
	CTTCAGCACCTCCTGCCTCTTCCTCAAGCTCCTTGGCTCTAAGCTCTTCTACTGCTCCAA	
240	FSTSCLFLKLGSKLFYCSN	25
	TGGCAATCTCTCCTCCATCACCAGCCACTTGCAGGACCCCAACCACCTGACTCTGGACTG	84
260	G N L S S I T S H L Q D P N H L T L D W	27
280	V A N V E G L P E E Y T K Q N L K R L	29



Figure 1B

901	CTGGGTGGTGCCCGCCAACAAGCAGATCAACAGCTTCCAGGTCTTCGTGGAAGAGGTACT	960
300	WVVPANKQINSFQVFVEEVL	319
961 320	GAAAATCGCTCTGAGCGATGGCTTCTGCATCGATTCTTCTCACCCACATGCTCTGGATTT K I A L S D G F C I D S S H P H A L D F	1020 339
320	KIAUSDG! CIDSUII MADDI	333
1021 340	TATGAACAATAAGATTATTCGATTAATACGGTACAGGTAAAAGGACCCCAACAACACTGG M N N K I I R L I R Y R	1080 351
340		
1081	AGATGGGGAGTCCCAGGAAGCTCATGTCAGCCAGGTCTTGGAGGGCATCTCGCCAGTGGT	1140
1141	GCGAGGCAGGGGACTATACTAATCTGTATTAATTGTGTAGCAGGACTTGATTCCCCCCAT	1200
1141	GCGAGGCAGGGGACTATACTATATCTCTTTTTTTTTTTT	
1201	GATGAAGTCCACCTTTTGGAATCCAGTGTCCTCTGAACAGAACCACCTTTTTTCTTGCCA	1260
1261	TTTTGAGCTGCAGACAGGCGGTTTATTATGACAAGTGAAGAGTCAGCTGATGTGTACTAA	1320
1201		
1321	AGGAGGCCATAGGAGGATTTTCCAGCCAGGACAAAAGAGCAGCAGTTTTCTCCTGGGCTC	1380
1381		1440
1441	GAGGATGGGATGAGAACAAGAGGCTACCTCCAGTTAACCAGGACATAAAGTCCCCAGCGG	1500
1501		1560
1561	${\tt GGGGTGACCATGTTTGGCTGGCTTGGAATGCTGTGCATTCTCAGAGCTCTGTTAGTGTCC}.$	1620
1621		1680
1681	TTCAGAAGGTAGGAATGTCCCTCTTGATAGGGCTGAATCAAGGGATTCCTGGCTTTAGAA	1740
1741		18,00
1 9 0 1	CCDDDTCCDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD	

Figure 2A

		rigure 2A
		1 50
K+betaM4	(1)	MTGSHDVIGGAGKQVLCCFCKQRNKSLGTYPGVPGNALWLLT
KCNMB1	(1)	
K+Hnov28	(1)	
K+Hnov27	(1)	
CG10440	(1)	MDRERERDVKALEPRDLSSTGRIYARSDIKISSSPTVSPTISNSSSPTPT
qi.12654691	(1)	TIDALINE VIGILE ADDOTORE TIMODER TO
91.12054051	(1)	
		100
1	()	51 100
K+betaM4	(43)	SPACNALSTSAVMHGRDKGSVTHGTVQVLSDTRFFSCREGILPATQ
KCNMB1	(1)	MVKKLVMAQKRCERRALC
K+Hnov28	(1)	MDN@DW
K+Hnov27	(1)	MSRPLITURSPASPLXNQGIPTPAQ
CG10440	(51)	PPASSSVTPLGLPGAVAAAAAAVGGASSAGASSYLHGNHKPITGIPCVAA
gi.12654691	(1)	MPHRKERPSGSSLHTHGSTGTAECGNMSRLSLTRSPVSPLAAQGIPLPAQ
3	, ,	
		101 150
K+betaM4	(89)	SEAMSDPETENVGGKLYTESLATLTSEPDSMLGAMFSGKMPTKRDSQ-GN
		LGVEMVCAVIEYYILVTTVLPLYQKSVWEQESKCELIETNIRDQEELKG
KCNMB1	(19)	
K+Hnov28	(7)	GYMMWDPVTWYVGGHLYTWSLWTLTRYPDSMLGANFGCDFPTRRDBQ-GN
K+Hnov27	(25)	LEXSMAPVHIDVGGHMYTSSLATLTKYPESRIGRLFDGTEPIVLDSLKQH
CG10440	(101)	ASRYMAPVHIDVGGTMYTSSLETLTKYPBSKLAKLFNGQIPIVLDSLKQH
gi.12654691	(51)	LMXXIAPVHIDVGSHMYTSSLATLTKYPDSRISRLFNGTEPIVLDSLKQH
		151 200
K+betaM4	(138)	CFIDRDGKWFRYILNFLRTSALDLPEDFOEMGLLRREADGYQWQPILIEAL
KCNMB1	(69)	KKWPQYPCLWVNWSAAGRWAVLYHWEDTRDQNQQCSYIPGSVDNYQTARA
K+Hnov28	(56)	YFIDRDGPUFRYKLNFLRTSELTLPLDFKEEDLLRKEADEYQKEPUIQCL
K+Hnov27	(75)	YFIDRDGQMFRYELNFLRTSKLLEPEDFKDKTLLYEEAKYEQUQPMLLEK
CG10440	(151)	YFIDRDGGMFREELNFMRMSRLLEAEDFPDLELLLEEARYYEVEPMIKQL
gi.12654691	(101)	YFIDRDG <mark>E</mark> IJFRYMLSFLRTSKLLLPEDFKDFSLLYEEARYYQHQPMMREL
		201 250
K+betaM4	(188)	©EKEVELSKAEKNAMLNITLNQRVQTVHFTVREAPQIYSLSSSEMEV
KCNMB1	(119)	DVEKVRAKFQEQQVFYCFSAPRGNETS
K+Hnov28	(106)	NDPKPLYPMDSTRKLSKY
K+Hnov27	(125)	ERWKQDRETGRFSRECECLVVRVRVAPDL
CG10440	(201)	ESMRKDRVRNGNYLVAPPTPPARHIKTSPRTSASPECNYEVVALHUSPDL
gi.12654691	(151)	ERWQQEQEQREVVRVTPDL
•		
		251 300
K+betaM4	(235)	FNANIESTECLEWKLIGSKUFYCENENKESITSHLODPNHUTLDWANVE
KCNMB1	(146)	VLFQRLYGPQALDFSLFWPTFLDGGLDIIAMVKSNQYLSDDAAQK
K+Hnov28	(133)	SNPWAWIITQLTHTTKVHSTLEGISNYETKWNKHMMDTRECQVSFTFEPO
		GERITLSCOKSLEENFPERCOVMCNSKN-AGWNH-DSTHVIRFPLNGYC
K+Hnov27	(152)	
CG10440	(251)	GERIMLSABRALLDELFPEASOATOSSRSGVSWNQGDWGQIIRFPLNGYC
gi.12654691	(178)	GERIALSGEWALTEEMFPETGEWMCNSWM-AGWNQ-DPTHMIRFPLNGYC
		301 350
K+betaM4	(285)	GLPBEBYTKQNLKRLWVWPANKQIN-SFQVFVBEWLKIARSDGFCIDSSH
 KCNMB1 	(192)	
K+Hnov28	(183)	DYHOEVSLRVHLMEYHTKQGFTIRNTRVHHMSERANENTWEHNWTFCRLA
K+Hnov27	(200)	HINSVOVI ERLOORGEEIIVGSCGGGVDSSOFSEYVI RREIRRTPRVPSVI
CG10440	(301)	KLNSVQVLTRLLNAGTTTEASVGGQQFSEYTLARRWPM
gi.12654691	(226)	RLNSVQDVL
J 00.1074	,0/	

Figure 2B

		251	200
		351	368
K+betaM4	(334)	PHALDFMNNKII	RLIRYR
· KCNMB1	(192)		
K+Hnov28	(233)	RKTDD	
K+Hnov27	(250)	RIKQ回PL	
CG10440	(339)		
gi.12654691	(235)		

Figure 3

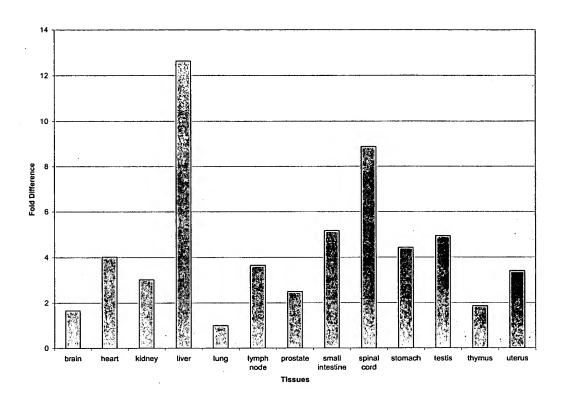


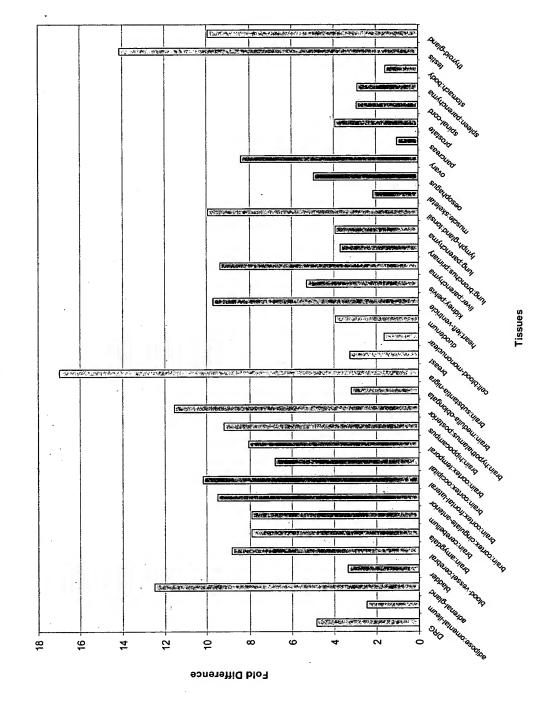
Figure 4.

K+betaM4

Protein	Genbank ID	Identities	Similarities
human potassium channel K+Hnov27 protein	gi Y34125	31.6%	45.1%
human potassium channel K+Hnov28 protein	gi Y34129	42.3%	50.5%
human neuroblastoma protein	gi 12654691	36.2%	47.3%
Drosophila CG10440 protein	gi 7291303	28.0%	38.6%
Human Maxi-K potassium channel beta subunit, KCNMB1	gi 4758625	26.1%	39.1%

K+betaM5

Protein	Genbank ID	Identities	Similarities
human potassium channel	gi Y34129	31.7%	43.4%
K+Hnov28 protein			1
the human lung protein, MGC:2376	gi 12654469	34.4%	45.6%
human MSTP028 protein	gi 11640564	31.7%	43.4%
Caenorhabditis K+ channel tetramerisation domain containing protein	gi 3875362	34.4%	45.6%
Drosophila CG10465 protein	gi 7302243	30.8%	38.3%
Human Maxi-K potassium channel beta subunit, KCNMB1	gi 4758625	20.0%	40.0%



'igure

Figure 6A

	AT	GAC	GAT	'GGC	GGT	$_{ m TTT}$	GCG	GAA	TAG	AAA	.AGG	GGG	AAA	GGG	ACC	ACT	CAG	GCG	CCG	GCCG	
	M	T	M	A	V	L	R	N	R	K	G	G	K	G	P	L	R	R	R	P	
,																				•	
																				CGCG	
	L	Α	L	P	A	L	R	L	G	Ε	L	P	A	N	Q	G	G	T	S	A	
	GC	GTC	GGC	!CAG	TAG	CGG	GAG	GCG	GTC	:GGG	TCA	GGC	ccc	AGC	TGG	GCG	CGA	.GCG	GGT	CGGC	
	A	s	A	s	s	G	R	R	s			A	P	A		R	E		v	G	
					-	_														.GCCC	
	V	E	G	Α	Т	Α	Ļ	P	P	A	Н	С	L	S	P	P	S	G	Q	P	
	GC	AGC	CGG	CCG	CGT	CAT	GCC	AGG	CGC	TGC	TCG	GCG	AGC	CAG	AGG	GAT	GGT	'GG'I	'AGT	CACG	
	Α	Α	G	R	V	M	P	G	Α	Α	R	R	A	R	G	M	V	V	V	T	
	GG	GCG	GGA	.GCC	AGA	.CAG	CCG	TCG	TCA	GGA	CGG	TGC	CAT	GTC	CAG	CTC	TGA	CGC	CGA	AGAC	
	G	R	Ε	P	D	S	R	R	Q	D	G	A	M	S	S	S	D	A	Ė	D	
																				GCTG	
	D	F	L	E	Р	Α	Т	P	Т	Α	Т	Q	Α	G	Н	Α	L	Ъ	L	Ļ	
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	СТ	GTC	CAC	ACT	'GCG	GTG	CTA	.CGA	AGA	CAC	CAT	GTT	GGC	AGC	CAT	GTT	'CAG	TGG	GCG	GCAC	
	-		-		R								A			F	s	G		Н	
																				TGGA	
	<u>Y</u>	I	<u> P</u>	<u>T</u>	D	S	E	G	R	<u>Y</u>	F	I	D	R	D	G	_ <u>T</u> _	Н	F	<u>G</u>	
																				TGTG	
	<u>v</u>			IN	r	- 11	_ К		G	ע		P	P		<u> </u>				_A_	<u>v</u>	
	TA	ממי	AGA	.GGC	יככם	стъ	СТЪ	тсс	יראיז	'CGG	:GCC	ירריד	יככיד	GGA	GCA	сст	'GGA	GAD	САТ	'GCAG	
													L_								
								_													
	CC	ACT	GAA	GGG	CGA	.GAA	GGT	'GCG	CCA	AGC	GTT	TCI	'GGG	ACT	'CAT	GCC	CTA	TTA	CAA	.AGAC	
													G								
	CA	CTT	GGA	GCG	GAT	TGT	'GGA	.GAT	'CGC	:CCG	GCT	GCG	TGC	GGT	'CCA	.GCG	GAA	.GGC	:CCG	CTTT	
																				F	

Figure 6B

841	GCCAAGCTCAAGAGCTTGACACCTTCCTGGCTAATGAGTGTCCTCATCAAGATGCCCCCT	900
281	AKLKSLTPSWLMSVLIKMPP	300
901 301	GGAGTCACATCATGGATTAACGCAGAAAGGCGGCTGTATTTGGAAACTCCCATTGGTCCAGVTSWINAERRLYLETPIGP	960 320
961 321	GAGAGACAATGAGAAGAAATCCCCTGTCCAGTTGCCTGCAGGAGTATTCCAACAC E R Q N N E K K S P V Q L P A G V F Q H	1020 340
1021 341		1080 343
1081	GCACTGTTCTCTGTTTGCATGGCAATTCTGACCCTTTTATGGCAACAACACCCCTGGGAC	1140
1141		1200
1201	CAAGTGATGTTTCCAGAGTGGAAGGCTCTCACCGTGTCCCAGGATTTCTGGGGTTTGTAA	1260
1261	GCAGTACTGGCCATTTGTGACCCTGTTTTTTACCTAATCATTCTGTCTTTTTAGGACATG	1320
1321	GTTTTACCCGATCCCTGGCAAAGGATCCAGAATTCCAATAGCTGAAAACCCTGTTATAGC	1380
1381	TTTTCTCCTATTCTGCCTTACCCAAGACACACTTGAACCCCTCAGTAAGGCTATAGAGAG	1440
1441	GGCCATGAGCAGGGGCAGCCTCTCCCTTGTTTCTACAGCTCCATGATGAGGGGTTGACTG	1500
1501	AGGCCAGCAATCCTTGTAGGTGTGACAGTTGCAATATAATTAACAGTTTCAAGATCTAGA	1560
1561	GGTACCTTTTGAAAGAACCCCTTCAGGGATATCTATCCACAGTAGCCTGGAGCAGCCAAG	1620
1621	GTGAACCTGAGATTTTGACCCACACAATAAGGGGGGGCCATTCTTTTTCAAATATTTTGG	1680
1681	CTTCAGAATACACTTCATTACACATGCAAATATTGAGAGATTAACAGAAATTCCAGCTCT	1740
1741	TATGCCTAACTGAGAAGAGCCACTGCAAGTTGCAGTTAGGTACCCATGTGCAGCAGAGGC	1800
1801	CAGCTGAATCCCAGAGCTTCCCAAAGTGGACACCAGCGGGGACTATTCCTGATGTCCCAC	1860
1861	CCAAGAGAGAAGATGAGCTGAGGCGCTCTTGCTCTGCCCAAATGCATCCCATGTGCATT	1920

Figure 6C

1921	CACGTGTCACCCATTCAAAATAACATGGCATTCTTGGAACCTTGTATCTGACATGTAAGA	1980
1981	CCAGCCTACACATTGGGGTGGGTGCAGGGGCTCACACTTGTAATCCTAGCACTTTGGAAG	2040
2041		2100
2101	AATCCTGTCTCTAAGAAATAAATAATAATAATAAAAAAAA	

Figure 7A

		rigule /A
		50
K+betaM5	(1)	MTMAVLRNRKGGKGPLRRRPLALPALRLGELPANQGGTSAASASSGRRSG
KCNMB1	(1)	
CG10465	(1)	
gi.12654469	(1)	
K+Hnov28	(1)	
MSTP028	(1)	
K+channel_tetra	(1)	
_		
		51 100
K+betaM5	(51)	QAPAGRERVGVEGATALPPAHCLSPPSGQPAAGRVMPGAARRARGMVVVT
KCNMB1	(1)	
CG10465	(1)	
qi.12654469	(1)	
K+Hnov28	(1)	
MSTP028	(1)	
K+channel tetra	(1)	
K+CHaimer_cccra	(1)	
		101 150
77 . h - h - N/F	(101)	GREPDSRRQDGAMSSSDAEDDFLEPATPTATQAGHALPLLPQEFEEWVPL
K+betaM5		GREPUSKRQUGANISSSDAEDDFBEFATFTATQAGRADFBDFQEFEBAVFB
KCNMB1	(1)	DHKILLKGHSSQYRK
CG10465	(1)	
gi.12654469	(1)	MST資VEL MDNGDWGYMM现DP <mark>VTL</mark>
K+Hnov28	(1)	
MSTP028	(1)	MEEMSGESVVSSAVPAAATRTTSFKGTSPSKYVKI
K+channel_tetra	(1)	MEPSTEVKI
		151 200
K+betaM5	(151)	NIIGGAHITTRLSTLRCYEDIMLAAMFSGRHYIIPTDSEGRYFIDRDGTHFG
KCNMB1	(9)	@KRGETRALCLGVTMVVCAVITYYDWVTTVLPLY@KSVWTQESKCHLIET
CG10465	(24)	NVGGHÏÄÄYTTIÏGTLTKNNDÄMLSAMFSGRÄEÄLTDSEGWIÄLIDRCGNHFG
gi.12654469	(8)	NVGGERHTTTLGTLRKFPGSKLAEMFSSLAKASTDAEGRFFIDRPSTAFR
K+Hnov28	(17)	NVGGHLYTTSLTTLTRYPDSMLGAMFEGDEPHARDBOGNYFIDRDGPLFR
MSTP028	(37)	NVGCALXYTTMOTLTK-ODMMLKAMFSGRMEVLTDSEGWILLIDRCGKHFG
K+channel_tetra	(10)	DVGGKTFKTTTFTLCK-HDSMLKTMFCTDVPVTWVEEGSVFIDRDSKHFR
_		
		201 250
K+betaM5	(201)	DWLNELRSGDRPPRER-WRAVYKEAQYYAIGPLREQLENMQPLKGEK-
KCNMB1	(59)	NIRDQEELKGKKNPQYPCLWVNVSAAGRWAVWYHTEDTRDQNQQCSYIPG
CG10465	(74)	IILNMLRDGTWPLPETNKETAETLAEAKYYCTTELAISCERALYAHQEPK
gi.12654469	(58)	PILDMLRTGQWPTOHUPEVYREAQSYEIKPLWKLLDDMPQIFGEQV
K+Hnov28	(67)	YNLNELRTSELTLPLDFKEEDLLRKEADEYQIEPLEQCLNDPKPLYPMD-
MSTP028	(86)	TILNYLRDGAYPLPESRREHEELLAEAKYYLYQGLYEEC@AALQNKDTYE
K+channel tetra	(59)	LILNGLRDGQMALPDSDREYREVLAEASYGLMDPLIELCGERLEQSLNP-
-		
		251 300
K+betaM5	(247)	VRQAFLGLMPYYKDHLEREWEIARLREWQR
KCNMB1	(109)	SVDNKQRARADVEKVRAKFQEQQVFYCESAPR
CG10465		PICRTPLTSQKEQUESSELKPAVITVVQRQNNKYSYTSTSDDNEMKN
gi.12654469	(104)	SRKQELEQVPGYSENLEEMVRLARAEATTARKSSWEVC
K+Hnov28	(116)	TREEMVELSSTRAMSKYSNPVAVITTQLTITTKNHSL
MSTP028		PFCKVPWITSSKEEQKWIATENKPAVKILYNRSNNKYSYTSNSDDNWKKN
K+channel tetra	(108)	YWHWSTVLEARKINFAMEKPIVVERLPVYIATSGNQSYYFS
K+Chaimei_cecia	(100)	I HI I DON O I VI DE MICHEL AMBREL I MAGRETI
		301 350
K+betaM5	(277)	KARBAKEKSLTPSWEMSWLIKMPPGVTSWINAERREYLETPIGP
	(2//)	GNETSVIFQRIYGPQAMIFSLFWPTELLITGGLLILLAMIKSNQY
KCNMB1		GNETSVBFQQMTGFQAMMFBLFWF
CG10465	(174)	WETEEQDAYWSEVECTEODKKMFKSVVKFGPWKAVLDNSDEMHCLEMDI
gi.12654469	(142)	EART FEOTO MEMORIAN MANAGEMENT AND MEMORIAN MEMO
K+Hnov28	(153)	EEGESNYFTKWNKHMNDERDCQVSFTFGPCDMHQEVGLRVHMMEYIT
MSTP028	(186)	ELEDKI SLÆFINGRØÆFIKDVIGDEICCWSFYGGGRÆFIARVCTSI
K+channel_tetra	(150)	ETKERE SEEWHKHWARELITEPEFNEDCSWSFFLRAKKETARIKG-P

Figure 7B

		351	400
K+betaM5	(321)	ERQNNEKKSPVQLPAGVFQHFMG	
KCNMB1	(184)	MSILAA@K	
CG10465	(221)	WYATDRKHEKVEFPEAR I YEET LQVLLYE	IRNAPDQELMQATSSARVG
gi.12654469	(192)	KAQGYKVF <u>SK</u> FYLTYPTKRNEFHFNIYSF	
K+Hnov28	(200)	KQGFTIRNERVHHMSERANENTVEHNWTFO	CRLARKTDD
MSTP028	(232)	WYATEKKOTKVEFPEARIYEETLNILLYE	AQDGRGPDNALLEATG
K+channel_tetra	(197)	MDCNLVEECMPKTVERREKKTWH	
		401	440
K+betaM5	(344)		
KCNMB1	(192)		
CG10465	(269)	SASGTSINQYTSDEEEERTGLARLRSNKR	INPS
gi.12654469	(226)		
K+Hnov28	(238)		
MSTP028	(277)	GAAGRSHHLDEDEERERIERVRRIHII	KRPDDRAHLHQ
K+channel_tetra	(221)		

Figure 8

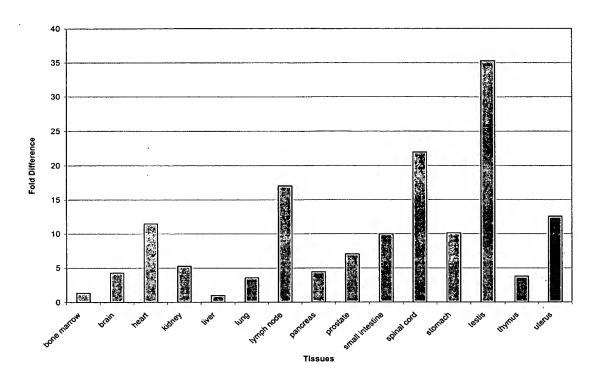




Figure 9

